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Inference in Continuous Systems with Mildly Explosive Regressors*

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Abstract

New limit theory is developed for co-moving systems with explosive processes, connecting continuous and discrete time formulations. The theory uses double asymptotics with infill (as the sampling interval tends to zero) and large time span asymptotics. The limit theory explicitly involves initial conditions, allows for drift in the system, is provided for single and multiple explosive regressors, and is feasible to implement in practice. Simulations show that double asymptotics deliver a good approximation to the finite sample distribution, with both finite sample and asymptotic distributions showing sensitivity to initial conditions. The methods are implemented in the US real estate market for an empirical application, illustrating the usefulness of double asymptotics in practical work.

Keywords: Cointegrated System; Explosive Process; Moderate Deviations from Unity; Double Asymptotics; Real Estate Market.

JEL classification: C12, C13, C58

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